Sheet 1 of 1			INFORMA	TION DISCLOSÙRE STATEMENT		/	OIPE	
FORM PTO 1449 (1		TMENT OF COMMERC	F	ATTY DOCKET NO. 2004_0285	SE 10	RIAL NO. 0/783,588	DEC 1 9 2005	
PAT	ENT AN	D TRADEMARK OFFIC	E .	APPLICANT Mitsuaki OSHIMA et al.		1	TAN DANGE OF THE PARTY OF THE P	
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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
/DH/	AA	4,597,090	6-24-86	Forney, Jr.				
/DH/	AB	4,077,021	2-28-78	Csajka et al.			·	
/DH/	AG	2005/0084750	4 21 05	Wang et al.				
-/DH/	AD	2005/0058833	3-17-05	Epstein et al.				-
/DH/	AE	2005/0922922						
/DH/	AF	4,918,437	4-17-90	Jasinski et al.				
/DH/	AG	5,023,889	6-11-91	Divsalar et al.				
/DH/	АН	5,063,452	11-5-91	Higurashi				
/DH/	Al	5,124,852	6-23-92	Suwa et al.				
/DH/	AJ	5,136,380	8-4-92	Cho				
/DH/	AK	5,146,335	9-8-92	Kim et al.		·		
/DH/	AL	5,148,422	9-15-92	Sako et al.				
/DH/ 	АМ	5,218,436	6-8-93	Sugiyama et al.				
	, -		FORE	IGN PATENT DOCUMENTS			·	
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION. YES	NO
/DH/	AN	2627574	7-21-04	CN	•	•		
/DH/	AO	1529838	5-11-05	EP			abstract	
/DH/	AP	1499725	5-26-04	CN			only abstract	
DH/	AQ	2004-159207	6-3-04	JP		·	corresponds to AP	
DH/	AR	152885 <u>4</u>	5-11-05	EP	•		only abstract	
DH/	· AS	52118	12-16-02	UA			only abstract	
/0H/	AT	1569334	1-26-05	CN				×
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		to PTO: February 23,		FILING DATE February 23	3, 2004			GROUP		
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· /DH/	AA	5,311,550	5-10-94	Fouci	he et al.					
/DH/	AB	4,630,287	12-16-86	. Arm	nstrong					
/DH/	AC	4,271,527	6-2-81	. Arm	strong				i	
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/DH/	AE	5,398,073	3-14-95	· · v	Vei					
. /DH/	AF	5,452,015	9-19-95	Huly	yalkar					
/DH/	AG	5,565,932	10-15-96	Citte	a et al.	, 2		•		
/DH/	АН	5,481,412	1-2-96	Bann	ai et al.					.
/DH/	AI	3,909,721	9-30-75	Bussga	ang et al.					
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/DH/	AJ	0365431	4-25-90	E	EP					х
/DH/	AK	0485105	5-13-92	E	EP ·				х	
/DH/	AL	92/14343	8-20-92	v	vo	<u> </u>			Х	
/DH/	АМ	89/08366	9-8-89	W	vo				х	
/DH/	AN	0031193	7-1-81	E	ĒP .				Х	
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/DH/	AO	Shinji Matsumoto Telecommunicat	o et al., "200 M lions Review, J	ib/s 16 QAM D January 1982,	Digital Radio-Relay vol. 24, no. 1, paç	y Syste ges 65	em Ope -73.	rating in 4 and 5	GHz Band	ds", Japan
/DH/	AP	M. Pecot et al., *Image Communi	Compatible Coication, Octobe	oding of Televis r 2, 1990, no.	sion Images, Part 3, pages 259-268	12. Co	mpatibl	le System", Sign	al Process	sing
/DH/	AQ	Mitsuaki Oshima	, "Constellation	n-Code Divisio	on Multiplex for Dig	gital HI	DTV", IE	EEE, 1992, page	es 1086-10)92.
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

Sheet 1 of 2 INFORMATION DISCLOSURE STATEMENT												
FORM PT			TMENT OF COMMERC	DIPE	ATTY DOCKET NO. 2004_0285	SERIAL 10/783						
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'EXAMI INITU			DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE				
DA	+	AA	3,824,548	7-16-74	Sullivan et al.							
		AB	3,959,726	5-25-76	Hinoshita et al.							
		AC	4,303,939	12-1-81	Stephens et al.							
		AD	4,303,941	12-1-81	Marti et al.							
		AE	4,309,726	1-5-82	Tanaka et al.							
	AF 4,535,352 8-85 Haskell — — —											
		AG	4,564,858	1-14-86	Resch							
		АН	4,581,639	4-8-86	Judge							
		Al	4,769,819	9-6-88	Matsutani et al.		-					
		AJ	4,794,447	12-27-88	Tsinberg							
		AK	4,800,426	1-24-89	Glenn							
		AL	4,817,192	3-28-89	Phillips et al.		-					
		AM	5,007,088	4-9-91	Ooi et al.		-					
		AN	5,029,003	7-91	Jonnalagadda							
74	-	AO	5,134,464	7-28-92	Basile et al.							
				FORE	IGN PATENT DOCUMENTS							
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Di	11-	AR	Ryutaro OHMOTO e	t al., "π/4-shift	QPSK Subcarrier Transmis	ssion", 1991						
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74	AA	5,181,112	1-19-93	Citta et al.				-		
•	AB	5,377,051	12-27-94	Lane et al.				-		
·	AC	5,400,084	3-21-95	Scarpa						
	AD	5,576,902	11-19-96	Lane et al.						
	AE	5,218,622	6-8-93	Fazel et al.	_					
	AE	5,561,468	10-1-96	Bryan et al.					· · ·	
	AG	5,598,220	1-97	Citta et al.					_	
H	АН	5,802,241	9-1-98	Oshima		 -			-	
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DH	AJ	3-48587	3-1-91	Japan	_			abstract		
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		OTHER	DOCUMENT(S) (II	ncluding Author, Title, Date, Pertine	ent Pages,	Etc.)				
D4-	AO	J. A. C. Bingham, "N Communications Ma	fulticarrier Mod gazine, Vol. 28	lulation for Data Transmiss 3, May 1990, pages 5-8 an	sion: An d 11-14	ldea Wh	ose Time Has	Come", IEE		
TH	AP	B. Hirosaki, "An Orth Transactions on Cor	ogonally Multi nmunications,	plexed QAM System Using Vol. Com-29, No. 7, July 19	the Dis 981, pag	crete Fo ges 982-	urier Transform 989	n", IEEE		
DH	AQ	L. J. Cimini, Jr., "Ana Multiplexing", IEEE 1	alysis and Simu Fransactions or	ulation of a Digital Mobile Con Communications, Vol. Co	channel om-33, N	Using O	rthogonal Fred y 1985, pages	quency Division 665-675 and	on d Annex	
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DH	AJ	2-154583	6-13-90	Japan				abstract	
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PH	AO	Shigeki MORIYAMA Spring National Con Part 2, p. 406, March	vention Record	Propagation Characterist d, The Institute of Electro	tics at VH onics, Info	F and U	HF bands in Ui and Communid	rban Area", 19 cation Engine	991 ers,
DH	АР	Yasuhiro ITO et al., ' Terrestrial Digital Te	'Adaptive Wei levision Broad	ghted Code Division Mult casting", ITE Technical f	tiplexing (Report Vo	AW-CDI	M) Transmissio . 13, pp 27-32,	n System for February 25	, 1993
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M	AA	5,311,550	5-10-94	Fouch	ne et al.						
	AB	4,630,287	12-16-86	. Arm	strong				,	-	
	AC	4,271,527	6-2-81	Arm	strong					_	
	AD	5,050,188	9-17-91	C	Dirr	1					
	AE	5,398,073	3-14-95	٧	Vei	Į					
	AF	5,452,015	9-19-95	Huly	/alkar						
	AG	5,565,932	10-15-96	Citta	-						
	АН	5,481,412	1-2-96	Bannai et al.							
H	Al	3,909,721	9-30-75	Bussga	ing et al.						
			F	OREIGN PATENT	DOCUMENTS						
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A	AJ	0365431	4-25-90	E	P					х	
	AK	0485105	5-13-92		P .	,			· x		
	AL	92/14343	8-20-92	W	<i>1</i> 0				х		
	АМ	89/08366	9-8-89	W	<i>1</i> 0	_			х		
PH	AN	0031193	7-1-81	E	Р				Х		
			ER DOCUMENT(S	6) (Including Author	or, Title, Date, Pertin	ent Pages,	Etc.)				
P4-	AO	Shinji Matsumoto Telecommunicat	et al., "200 Mi ions Review, J	b/s 16 QAM D anuary 1982,	igital Radio-Rel vol. 24, no. 1, p	ay Syste ages 65-	m Oper 73.	ating in 4 and 5	GHz Band	is", Japan	
DAL	AP	M. Pecot et al., "Image Communi	Compatible Co cation, October	ding of Televis 2, 1990, no. :	sion Images, Pa 3, pages 259-26	art 2. Co 38.	mpatible	e System*, Sigr	nal Process	ing	
Pot	AQ	Mitsuaki Oshima	, "Constellation	-Code Division	n Multiplex for 0	Digital HC	OTV", IE	EE, 1992, page	es 1086-10	92.	
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Sheet 2 of 7										
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LIST OF	REFEREN	TRADEMARK OFF	CANT(S)	APPLICANT Mitsuaki OSHIMA et al.						
		al sheets if necessary) to PTO: February 23		FILING DATE February 23, 2004			GROUP	H 261	1	
				U.S. PATENT DOCUMENTS			,	7		
'EXAMINER INITIAL		DOCUMENT NUMBER	DÁTE	NAME	CLA	ss	SUBCLASS		DATE IF	
2H	AA	4,227,152	10-7-80	Godard et al.						
	AB	4,525,846	6-25-85	Bremer et al.						
	AC	4,751,478	6-14-88	Yoshida						
	AD	4,891,806	1-2-90	Farias et al.						
	AE	4,903,125	2-20-90	Parker				~	-	
	AF	4,937,844	6-26-90	Kao						
	AG	5,164,963	11-17-92	Lawrence et al.						
	АН	5,555,275	9-1996	Oshima	-			~	-	
进	Al	5,565,926	10-15-96	Bryan et al.				~		
			F	OREIGN PATENT DOCUMENTS	•					
		DOCUMENT NUMBER	DATE	COUNTRY	CLAS	ss	SUBCLASS	TRANS	LATION S NO	
DH	AJ	0311188	4-12-89	EP				Х		
	AK	0329158	8-23-89	EP				Х		
	AL	64-5135	1-10-89	JP				х		
	AM	63-28145	2-5-88	JP				х		
DH	AN	62-133842	6-17-87	JP				. X		
		OT:	ER DOCUMENT(S	S) (Including Author, Title, Date, Pertin	nent Pages.	Etc.)				
M	AO		'A Performance	Study of NLA 64-State OAM			tions on Comm	unications,	vol.	
pt	АР	Hideki Ishio et al	., "A Proposal o	of a Carrier Digital Transmiss	ion Syste	m Using	Multi-Level Al	PSK*, page	s 1-20.	
Pet	AQ	Shanmugam, "Di	gital and Analo	ng Communication Systems"	1979, p. 2	272.				
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PATI LIST OF F	ENT AND REFEREN	TRADEMARK OFF	ICE	APPLICANT Mitsuaki OSHIMA et al.				/		
		al sheets if necessary) to PTO: February 23	, 2004	FILING DATE February 23, 2004			GROUP 2007	tt 261	.	
				U.S. PATENT DOCUMENTS	_					
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLA	SS	SUBCLASS		DATE IF	
PH-	AA	5,105,442	4-14-92	Wei						
	AB	4,048,572	9-13-77	Dogliotti et al.						
	AC	5,282,019	1-25-94	Basile et al.						
	AD	5,311,547	5-10-94	Wei	~			_		
	AE	5,267,021	11-30-93	Ramchandran et al.						
	AF	5,038,219	8-6-91	Yamashita et al.	_				_	
	AG	5,087,975	2-11-92	Citta et al.	•					
	АН	5,086,340	2-4-92	Citta et al.		<i></i>	~			
DH	AI	5,243,629	9-7-93	Wei				~		
			F	OREIGN PATENT DOCUMENTS						
	ļ	DOCUMENT NUMBER	DATE	COUNTRY	CLA	ss	SUBCLASS	TRANS	LATION NO	
D4-	AJ	53-137657	12-1-78	JP ')]		х		
	AK	0282298	9-14-88	Europe				х		
	AL	0392538	10-17-90	Europe				х		
	АМ	0490552	6-17-92	Europe				х		
<u>DH</u>	AN	0506400	9-30-92	Europe				×		
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DH	AO									
pH	AP	P. Hoeher et al., Global Telecomr	Performance on munications Co	of an RCPC-Coded OFDM-ba nference "Globecom '91", De	sed Digit cember 2	al Audio 2-5, 199	Broadcasting 1, Vol. 1 of 3, F	(DAB) Syst Pages 2.1.1	em, IEEE - 2.1.7	
P4	AQ	K. M. Uz et al., C Pages 283-292	Combined multin	resolution source coding and	modulati	on for d	igital broadcasi	of HDTV*,	1992,	
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Sheet 4 of 7									
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LIST OF	REFEREN	TRADEMARK OFF CES CITED BY APPLIC	CANT(S)	APPLICANT Mitsuaki OSHIMA et al.					
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*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLA	ss	SUBCLASS		DATE IF
DH	AA	5,142,353	8-25-92	Kageyama et al.					
	AB	5,197,061	3-23-93	Halbert-Lassalle et al.					
	AC	5,291,289	3-1-94	Hulyalkar et al.	-				
	AD	5,166,924	11-24-92	Moose					
	AE	4,940,954	7-10-90	Aubert et al.				. —	
	AF	5,128,758	7-7-92	Azadegan et al.					Tel
	AG	5,038,402	8-6-91	Robbins					
DH	АН	5,638,112	6-10-97	Bestler et al.	_				
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24	Al	0448492A1	9-25-91	Europe					х
	AJ	0485108A2	5-13-92	Europe				х	
	AK	0525641A2	2-3-93	Europe				Х	
	AL	0540231A2	5-5-93	Europe				Х	
n u	AM	0531046A2	3-10-93	Europe				. x	,
		ОТІ	HER DOCUMENT(S	6) (Including Author, Title, Date, Pertin	nent Pages,	Etc.)			
24	AN	K. M. Uz et al., N	Multiresolution S	Source and Channel Coding 1	for Digital	Broado	ast of HDTV, 1	992, Pages	61-69.
PH	AO	Nambi Seshadri Fading Channel,	et al., Multi-Lev Vol. 4, No. 3, I	vel Block Coded Modulations May-June 1993, Pages 325-3	with Une	qual Er	or Protection fo	or the Rayle	eigh
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copthis form with next communication to applicant.

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DH	AA	5,063,445	11-5-91	Nishizawa et al.					
	АВ	5,819,000	10-6-98	Oshima					
	AC	5,999,569	12-7-99	Oshima					
DH	AD	5,892,879	4-6-99	Oshima					
				FOREIGN PATENT DOCUMENTS					
		DOCUMENT NUMBER	DATE	COUNTRY	CLAS	SS	SUBCLASS	TRANS	
P4	1,			Japan	<u>.</u>			abstract	
	AF 7-79415 3-20-95		Japan				abstract	<u> </u>	
	AG	5-75568	3-26-93	Japan				abstract	
	АН	86-07223	12-4-86	wo				×	,
	Al	2 187 611	9-9-87	Great Britain				х	
	AJ	85/04541	10-10-85	WO				х	
	AK	04-196822	7-16-92	Japan				abstract	
	AL	2-166979	6-27-90	Japan ·	-			abstract	
	AM	64-74836	3-20-89	Japan			 .	abstract	
Dif	AN	53-108215	9-20-78	Japan				abstract	
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D4-	AP	Ezio Biglieri et al	I., Introduction	to Trellis-Coded Modulation w	vith Applic	ations,	, April 6, 1992,	Pages 173-	207.
DH	AQ	English Languag	e Abstract of E	European Patent No. 93 30 75	75				
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· ·		АВ	4,855,692	8-8-89	Kennard et al.						
		AC	4,873,701	10-10-89	Tretter	,				-	
		AD	4,958,360	9-18-90	Sari						
		AE	5,115,453	5-19-92	Calderbank et al.						
		AF	5,168,509	12-1-92	Nakamura et al.		<u> </u>				
		AG	6,049,651	4-11-00	Oshima						
Dt.	+	AH	6,256,357	7-3-01	Oshima						
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7	4	AJ	0122805	10-24-84	EP	_		-	Χ.		
-		AK	63-180280	7-25-88	JP	_			abstract		
		AL	64-68144	3-14-89	Japan				abstract		
		AM	5-218978	8-27-93	Japan	_				X	
Ď	14	AN	3-69295	3-25-91	Japan				-	X	
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P	4	AO	Kazuhiko Nitado Conference on (ori, Synthesis o Communication	f Multichannel Orthogonal VS ns, June 14-16, 1976, Volume	B Signal 1, Page	ls by Qu s 3-25 -	radrature Metho 3-29.	od, 1976 Inte	emational	
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D	+_	AC	57-39629	3-4-82	Japan	.,			abstract	
		AD	58-161547	9-26-83	Japan	-			abstract	
		ΑE	63-180222	7-25-88	Japan	,			abstract	
		AF	92/22162	12-10-92	WO	-			х	
		AG	2-94814	4-5-90	Japan .	_		·	abstract	·
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		AI	2-218279	8-30-90	Japan				abstract	
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		АМ	2-195732	8-2-90	Japan				abstract	
		AN	5-167633	7-2-93	Japan	J			abstract	·
		AO	2-260726	10-23-90	Japan					х
<u>Pt</u>	+	AP	58-161427	9-26-83	Japan				abstract	
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/DH/	AA	5,210,770	5-11-93	Rice				
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^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop. this form with next communication to applicant.